



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/590,240

09/25/2006

Tsuyoshi Saito

6340-000078/US/NP

6748

27572 7590 10/31/2008
HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

EXAMINER

LE, DAVID D

ART UNIT

PAPER NUMBER

3655

MAIL DATE

DELIVERY MODE

10/31/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,240	Applicant(s) SAITO ET AL.	
	Examiner David D. Le	Art Unit 3655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 16 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/22/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This is the first Office action on the merits of Application No. 10/590,240, filed 25 September 2006. Claims 11-20 are pending.

Documents

2. The following documents have been received and filed as part of the patent application:
 - Copy of Foreign Priority Document, received on 08/22/06
 - Information Disclosure Statement, received on 08/22/06
 - Declaration and Power of Attorney, received on 09/25/06

Drawings

3. Figure 8 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

5. The abstract of the disclosure is objected to because it exceeds 150 words. Correction is required. See MPEP § 608.01(b).

Claim Objections

6. Claim 11 is objected to because of the following informalities:

- Line 6, "its" should be --an--.
- Line 8, "its" should be --an--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 18 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18:

- Line 3 recites the limitation “a connecting shaft”. It is unclear whether this newly recited limitation “a connecting shaft” is different from the one, which is first recited on line 14 of claim 11.
- Lines 4-5 recite the limitation "the first and second planetary reduction gears". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 11-15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 5,382,854 to Kawamoto et al. (hereinafter referred to as Kawamoto) in view of U. S. Patent No. 6,406,186 to Torii et al. (hereinafter referred to as Torii).

Claims 11-15 and 20:

Kawamoto (i.e., Figs. 1-2; column 4, line 9 - column 6, line 59) discloses a motor drive apparatus comprising:

- A wheel bearing (i.e., Fig. 1), a planetary reduction gear (i.e., Fig. 1, element 31), a driving section (i.e., Fig. 1, element 15) having an electric motor (i.e., Fig. 1, element 24) for driving the planetary reduction gear and a rotation member (i.e., Fig. 2, element 34);
- The wheel bearing including a wheel hub (i.e., Fig. 2, element 39) formed with a wheel mounting flange (i.e., Fig. 1, element 45) on one end, an inner ring (i.e., Fig. 2, being the inner race of bearing element 40) press-fit on a cylindrical portion of the wheel hub, the inner ring formed with at least one double row inner raceway surfaces on an outer circumferential surface, an outer member (i.e., Fig. 2, element 21) attached with double row outer raceway surfaces on an inner circumferential surface opposite to the inner raceway surfaces, and double row rolling elements (i.e., Fig. 2, element 40) rollably arranged between the inner and outer raceway surfaces;
- The planetary reduction gear including an input element (i.e., Fig. 2, being the teeth portion of the sun gear element S) mounted on the rotation member, a stationary element (i.e., Fig. 2, being the teeth portion of the ring gear element R) mounted on the inner circumferential surface of the outer member, a plurality of planetary elements (i.e., Fig. 2, being the planet gears) arranged between the

stationary element and the input element, and an output element (i.e., Fig. 2, being the planetary carrier element CR) for rotatably supporting the planetary elements relative to a connecting shaft (i.e., Fig. 2, element 38);

- The driving section forming the electric motor including a stator housing (i.e., Fig. 1, element 13) mounted on the outer member, a stator portion (i.e., Fig. 1, element 25) contained within the stator housing, and a rotor portion (i.e., Fig. 1, element 27) secured on the rotation member and arranged oppositely to the stator portion via a predetermined air gap (i.e., column 4, lines 33-34);
- The connecting shaft removably and torque-transmittably connected to the wheel hub, the connecting shaft adapted to drive a wheel (i.e., Fig. 1, element 47) by transmitting the rotation of the electric motor to the wheel hub via the planetary reduction gear;
- Wherein the planetary reduction gear comprises a sun gear (i.e., Fig. 2, element S) mounted on the rotation member, a plurality of planetary gears (i.e., Fig. 1, element P) meshing both with external teeth of the sun gear and with internal teeth formed on the inner circumferential surface of the outer member, and a carrier pin (i.e., Fig. 2) projecting from the outer circumferential portion of the connecting shaft to rotatably support the planetary gears;
- Wherein a braking apparatus (i.e., Fig. 1, element 44) is integrally mounted on the rotation member (it should be noted that the term “integrally” has been interpreted

according to Merriam-Webster's Collegiate Dictionary, tenth edition, as "essential to completeness");

- wherein the braking apparatus can be a parking brake;
- Wherein the parking brake comprises an intermediate member (i.e., Fig. 1, element 48) held on the stator housing, and an actuator (i.e., Fig. 1, element 50) for engaging and disengaging the intermediate member with the rotation member by displacing the intermediate member;
- Wherein the stator housing is separably fastened to the outer member (i.e., Fig. 2).

Kawamoto lacks wherein the outer member is formed with double row outer raceway surfaces on an inner circumferential surface opposite to the inner raceway surfaces.

Torii (i.e., Fig. 1; column 6, line 33 - column 8, line 35), on the other hand, discloses a wheel bearing device (i.e., Fig. 1) comprising an outer member (i.e., Fig. 1, element 20) is formed with double row outer raceway surfaces (i.e., Fig. 1, elements 21) on an inner circumferential surface opposite to an inner raceway surfaces (i.e., Fig. 1, elements 14 and 17).

Since all the claimed elements were known in the prior art, one skilled in the art could/would have replaced the bearing arrangement of Kawamoto with the bearing arrangement of Torii as claimed by known methods with no change in their respective

functions, and the replacement would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

11. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamoto et al. in view of Torii et al. as applied to claims 11-15 and 20 above, and further in view of U. S. Patent No. 4,402,374 to Knur et al. (hereinafter referred to as Knur).

Claim 18:

Kawamoto in view of Torii discloses the limitations as set forth above. Regarding claim 18, Kawamoto lacks a second planetary reduction gear as claimed.

Knur (i.e., Fig. 1; column 2, line 40 - column 3, line 19), however, discloses an individual-wheel drive apparatus comprising first and second planetary reduction gears.

Since all the claimed elements were known in the prior art, one skilled in the art could/would have replaced the single stage planetary reduction gear arrangement of Kawamoto with the two-stage planetary reduction gear arrangement of Knur as claimed by known methods with no change in their respective functions, and the replacement would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Allowable Subject Matter

12. Claims 16 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. Claim 19 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Sakamoto et al. (U. S. Patent No. 6,209,389) teaches a rolling bearing unit, as shown in Fig. 1.
- Goossens et al. (U. S. Patent No. 6,037,766) teaches a wheel bearing assembly, as shown in Fig. 1.
- Wakuta et al. (U. S. Patent No. 5,127,485) teaches an electric motorized wheel, as shown in Fig. 1.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Le whose telephone number is 571-272-7092. The examiner can normally be reached on Mon-Fri (0900-1730).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on 571-272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3655

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David D. Le/
Primary Examiner, Art Unit 3655
10/29/2008

ddl